REMARKS

Applicants have amended claim 76 to address the 35 U.S.C. § 112, ¶ 2 issues raised by the Examiner.

Claim 76 has been amended to correct the wording; the "removing only a portion..." clause should have been inserted before the language "and then removing the second substrate" in the previous amendment.

Claim 76 states in step (a) that the first cathode layer results includes the first electrode active material, some of the first solvent, and the first binder, but no substrate. Claim 76 states in step (b) that the second cathode layer includes the second electrode active material, some of the second solvent, and the second binder, but no substrate.

Step (c) in claim 76, even prior to this amendment, required layering of the first cathode layer and the second cathode layer to provide a cathode stack. The components of the first cathode layer are defined steps (a) and (b) respectively. As a result, during step (c) some solvent is present in both the first cathode layer and the second cathode layer. However, applicants have amended step (c) to specify that these components, including the solvent, are present in the cathode layer during the layering step. Thus, during the layering step both layers include solvent, providing the benefit described in the specification (¶ 36):

> It is believed that the residual solvent provides the partially dried layer with enhanced physical properties, e.g., flexibility, which enhances the ability of the layer to be laminated and calendered during fabrication....

Claim 76 was rejected under 35 U.S.C. § 102(b) as anticipated by Chu, U.S. Pat. 5,582,623 ("Chu") and alternatively under 35 U.S.C. § 103(a) as obvious in view of Chu. Applicants request reconsideration of the rejection. Chu removes the solvent before laminating his electrode layers. In fact, Chu explains that making thin electrodes that are later laminated avoids the problem of slow drying. Specifically, Chu states (col. 14, lines 16-32):

> Regardless of how the slurry film is applied, it should have a primary dimension, e.g., thickness, that allows for rapid drying. This thickness will, of course, depend upon such factors as slurry concentration and liquid volatility. In addition, the slurry film thickness should be chosen so as to produce electrodes of appropriate thickness for the ultimate battery application. For example, low power, high energy applications, such as batteries for pacemakers, may use thicker electrodes, e.g., up to a few millimeters. In contrast, high power applications, such as

> batteries for power tools or hybrid vehicles should employ thinner electrodes, e.g., no more than about 100 μm thick. It should be noted that electrodes of appropriate thickness for low power applications may be made by laminating two or more thinner electrodes. In this manner, the problem of slow drying associated with thick electrodes can be avoided.

Plainly, Chu wants to, and describes, removing the solvent before laminating. This is the opposite of the approach covered by claim 76 (as amended) -- leave some solvent to enhance the physical properties of the layers.

In fact, when describing the removable substrate embodiment, Chu states that "the substrate may be a sheet of inert material that does not adhere to the dried electrode material." Col. 14, lines 39-41 (emphasis added). As a result, the electrode layer provided when the removable substrate is removed is dry and does not include solvent.

Thus, Chu does not disclose or contemplate having solvent present when his electrode layers are laminated. Applicants therefore request that the 35 U.S.C. § 102(b)/103(a) rejection of claim 76 and claims dependent from claim 76 be withdrawn.

Claim 77 is directed to making two-sided cathodes in which layers of cathode material are bonded to both sides of the current collector. The cathode layers on one side of the current collector may be the same as or different from the cathode layers bonded to the other side. See ¶¶ 44 and 51. Claim 77 was rejected as obvious under 35 U.S.C. § 103(a) in view of Chu, but applicants request reconsideration of the rejection. Chu is concerned with a specific type of cathode material -- "active-sulfur-based materials". The cathodes disclosed by Chu including these materials are all single-sided and do not lend themselves, or suggest in any way, a double-sided design. See, for example, U.S. Pat. 4,833,048 and U.S. Pat. 5,162,175, referenced by Chu at col. 17, lines 39-45.

Claim 79 requires blending the binder and solvent, blending the electrode active material and the conductive acid, combining the blends into a cathode mixture, and then coating the cathode mixture into the substrate. The significance of the pre-blending steps is discussed in the specification (¶ 31):

> Referring to Fig. 1, the electrode material and the conductive aid are pre-blended (step 24) separately from the binder and the solvent, which are also pre-blended (step 26). Without wishing to be bound by theory, it is believed that pre-blending enhances contact between the electrode material and the conductive aid to provide enhanced electrochemical performance.

Claim 79 was rejected under 35 U.S.C. § 103(a) as obvious in view of Chu. Applicants request consideration of this rejection. Chu does not disclose or suggest dissolving a binder in a solvent and then adding a pre-blended mixture of the electrode active material and the conductive aid. Chu certainly does not disclose that pre-blending the electrode active material and the conductive aid enhances the contact between the electrode active material and the conductive aid.

Applicants submit that the claims are in condition for allowance and such action is respectfully requested.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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